

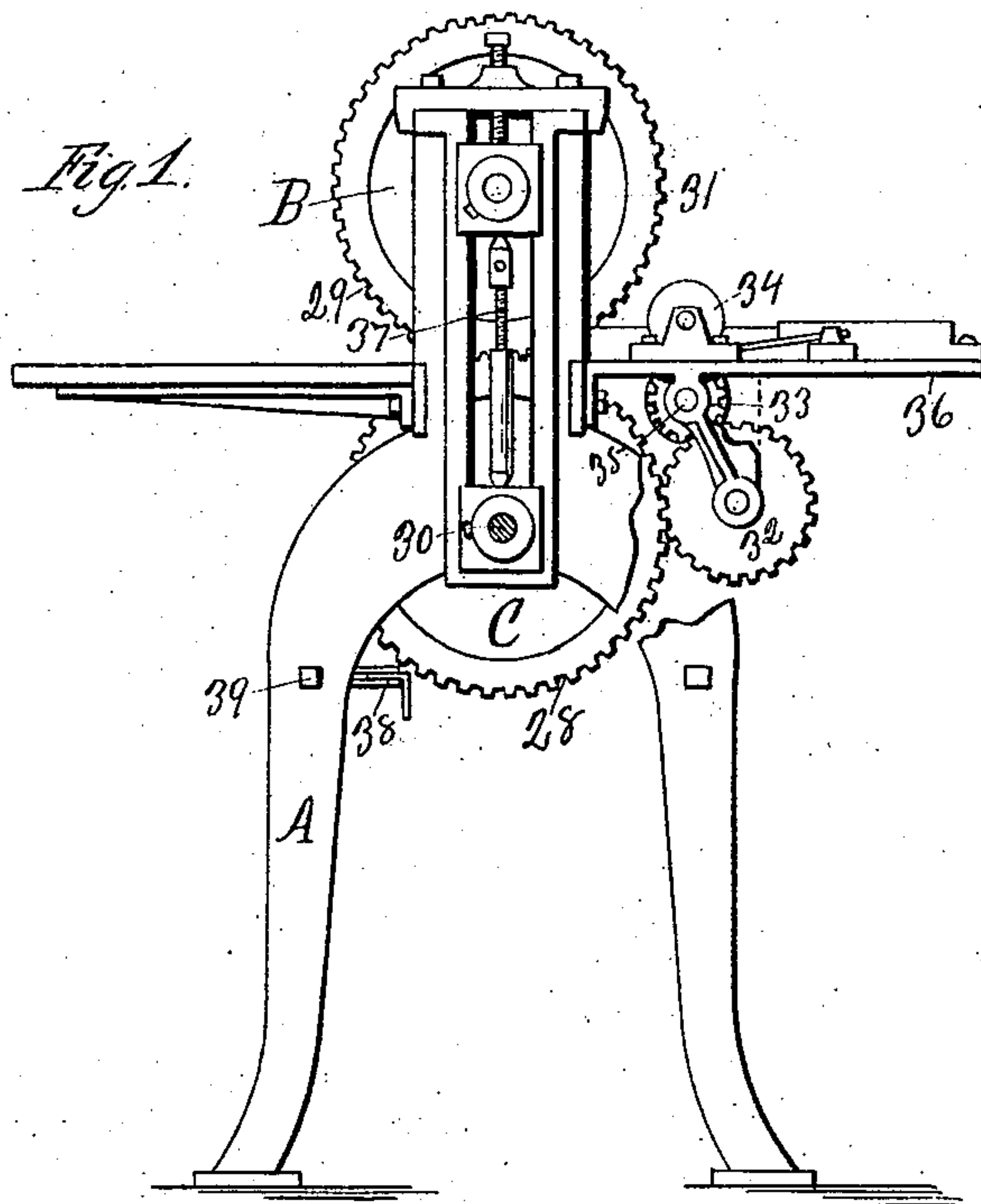
(No Model.)

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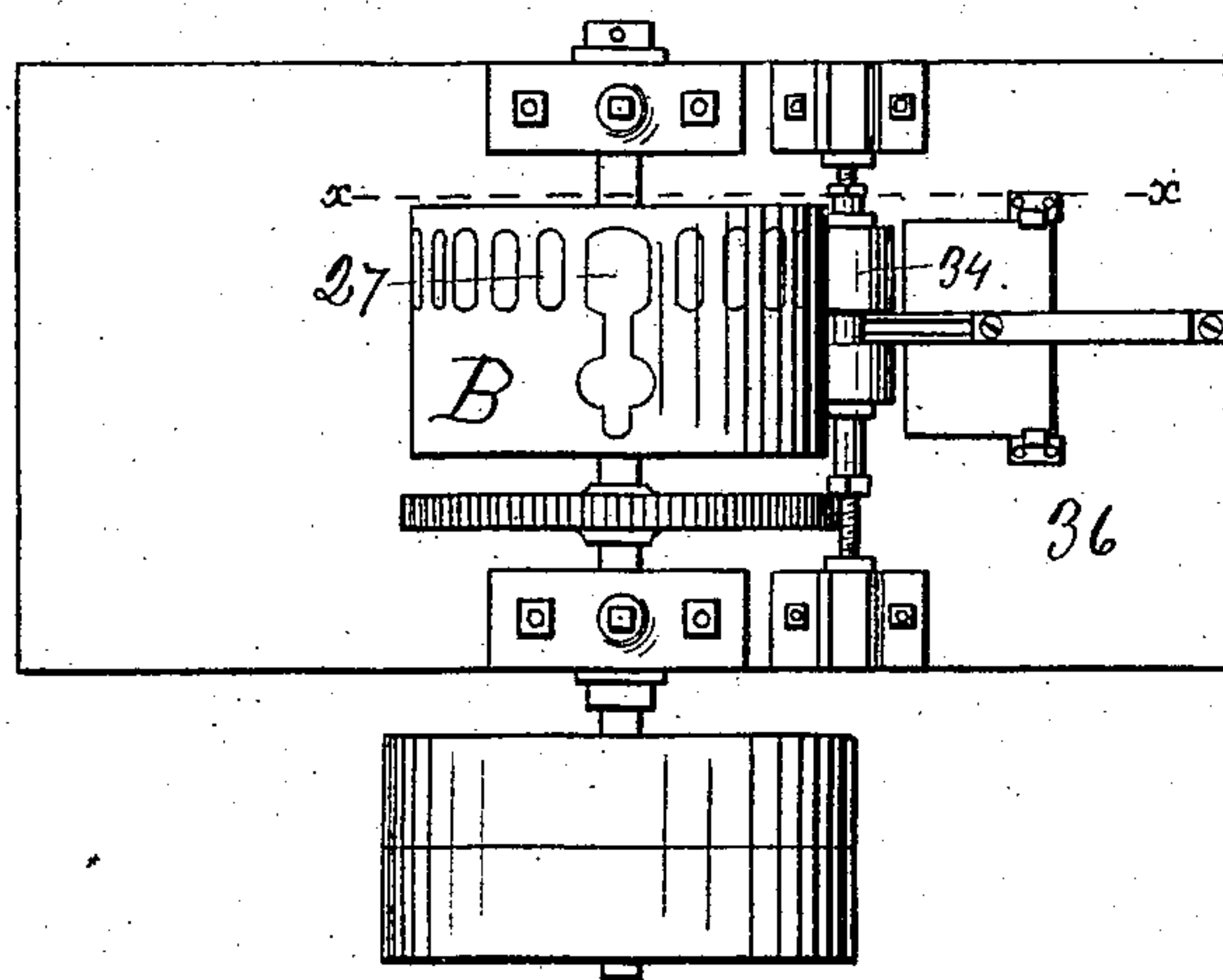
L. H. PAGE.  
Rotary Cutter.

No. 238,522.

Patented March 8, 1881.



*Fig 2.*



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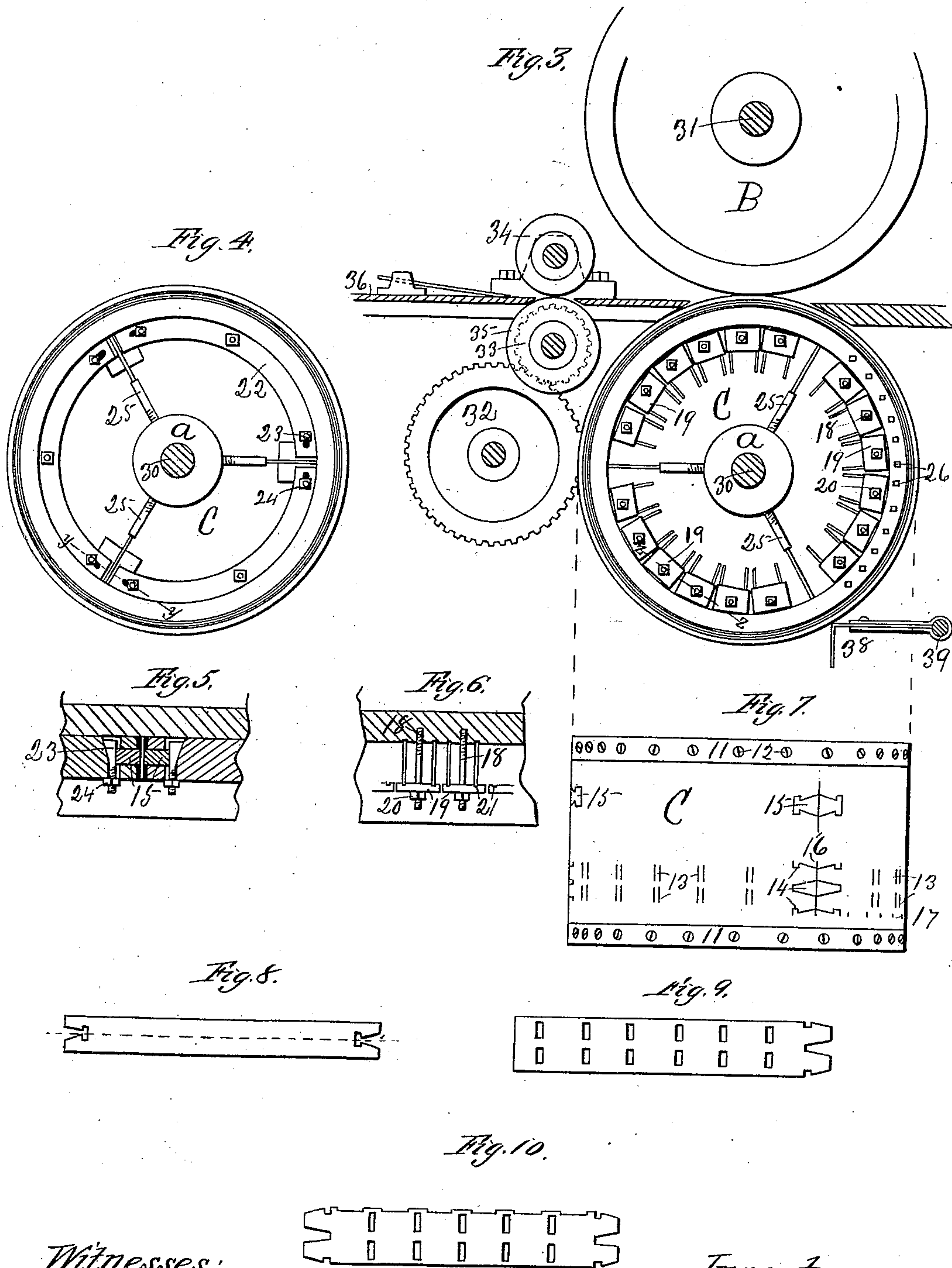
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# UNITED STATES PATENT OFFICE.

LEVI H. PAGE, OF CHICAGO, ILLINOIS.

## ROTARY CUTTER.

SPECIFICATION forming part of Letters Patent No. 238,522, dated March 8, 1881.

Application filed May 31, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, LEVI H. PAGE, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Rotary Cutter; and I do hereby declare the following to be a full, clear, and exact description of the invention, that will enable others skilled in the art to which it appertains to construct and make use of the same, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, forming a part of this specification.

The object of this invention is the improved construction of a rotary cutting apparatus adapted to carry a series of knives or cutters of any required shape; which are arranged in the periphery of a revolving drum or cylinder, and may be employed for the purpose of cutting out various articles from thin sheets of wood, leather, paper, &c.; but is more especially intended, in this connection, to cut out in proper form a series of slats from very thin wood veneer, which are employed in the construction of trays or racks for carrying fruit and eggs; and it consists of certain novel features, as will be hereinafter more fully described in detail, and set forth in the claims.

Figure 1 is an end elevation of my improved cutting mechanism; Fig. 2, a view looking from above. Fig. 3 is an end view, partially in section, in plane *xx*, Fig. 2, looking inward; Fig. 4, a view in detail, showing the arrangement of a portion of the cutters on the inside of the cutting-drum; Fig. 5, a sectional detail in the plane *yy*, Fig. 4; Fig. 6, a sectional detail in the plane *zz*, Fig. 3; Fig. 7, a plan of the cutting-drum; and Figs. 8, 9, and 10 are details of the slats produced by this cutting mechanism.

Referring to the drawings, A represents the legs or frame supporting the cutting mechanism; B, the upper revolving drum or cutting-bed, and C the lower drum, adapted to carry a series of cutters.

The lower drum, C, is composed of cast metal, and is provided with a covering of sheet rubber or other suitable elastic material upon the outer surface, which is secured to the drum C by means of the metal bands 11 and the attaching-screws 12, which are tapped into the drum, as shown in Fig. 7 of the drawings.

The upper drum, B, rests upon and has a frictional contact with the lower drum, C, and presents a revolving cutting surface or bed to the cutters arranged in the lower drum. When the sheets of wood veneer are passed in between the revolving drums the pressure of the upper drum embeds the material being operated upon into the elastic covering or surface of the lower drum, brings the material fairly against the cutting-edges of the cutters, and prevents the thin slats from being slit or spoiled or from moving out of place relative to the cutters. The elastic surface on the lower drum also serves to throw off the slats when cut out.

The series of cutters placed in the lower drum, C, are of different shape, so as to produce at the same time the several styles of slats required in the construction of a tray or rack. The series of cutters 13 produce the rectangular apertures in the slats shown in Fig. 9 of the drawings. The cutters 14 form the ends of the slats shown in Fig. 10 of the drawings. The cutters 15 produce the form of slat shown in Fig. 8 of the drawings. The straight cut-off knives 16 separate the slats into proper lengths, and the small cutters 17 nick out the upper edge of one style of slat in the manner shown in Fig. 10 of the drawings.

The cutters 13 and 14 are arranged in the same plane relative to the circumference of the drum C, and are secured in place by means of the stud-bolts 18, one end of which is tapped into the drum C, and the opposite ends receiving the clamping-plates 19 and the nuts 20, as shown in Fig. 6 of the drawings. These clamping-plates are provided on the inner side with two or more rectangular channels, 21, for the purpose of adapting each clamping-plate to engage with and retain two or more of the cutters 13 and 14 in a locked position.

The series of cutters 15 are attached to the ring 22, placed upon the inside of the drum C, as shown in Fig. 4 of the drawings, by means of the bolts 23, the inner ends of which are loose and square in form, while the outer ends are round and threaded for the reception of the nuts 24. These bolts have one bearing side beveled, and are of the form shown in Fig. 5 of the drawings, which form of construction adapts these parts to wedge closely together and hold the cutters firmly in position.



The cut-off knives 16 are held in place by means of the bolts 25, the inner ends of which are threaded and screwed into the hub *a* of the drum C, the outer ends being provided with a cavity or recess, into which fits a stem-like projection formed on the backs of the cutters. This form of construction permits of the bolts 25 being turned in or out for the purpose of adjusting the cutters to the required position.

The series of small nicking-cutters 17 are provided with square or rectangular projections on the backs thereof, which projections fit into recesses of a corresponding shape in the inner circumferential surface of the drum C. The cutters 17 are inserted from the inside of the drum, and are securely locked in position by means of the set-screws 26, which are inserted from the end of the drum, the inner ends of which have bearings on the rear part of the cutters.

The cutting-edges of the different styles of cutters are set so as to project one-sixteenth of an inch beyond the outer metallic surface of the drum C, and the elastic covering of sheet-rubber, being one-eighth of an inch in thickness, leaves the cutting-edges of the series of cutters one-sixteenth of an inch below the outer elastic surface of the drum C.

The upper drum, B, is cast with a series of openings corresponding in number to the cutters in the lower drum. These openings extend clear through the shell of the drum B, and are filled with wood, for the purpose of presenting the wooden cutting surface or bed 27 to the edges of the cutters located in the lower drum, as shown in Fig. 2 of the drawings.

The upper drum, B, was, in the first instance, constructed of wood. This was so affected by atmospheric changes that it could not be depended upon to present a true and even cutting-bed; a metal cutting-surface destroyed the edges of the cutters too quickly; but the combination of wood and metal in the manner shown and described successfully overcame these objections.

The gear-wheels 28 and 29, placed respectively upon the drum-shafts 30 and 31, are adapted to engage with each other, and secures a certain and regular motion of the upper drum relative to the lower one. The intermediate gear-wheel, 32, engages with the gear-wheels 28 and 33, as shown in Fig. 1 of the drawings, by which means motion is transmitted to the feed-rollers 34 and 35, arranged in a vertical plane above and below the feed-table 36.

The pressure of the upper drum on the lower one may be varied—that is, light or heavy—according to the nature and thickness of the material being operated upon, by means of the adjustable socket-screw 37, (shown in Fig. 1 of the drawings.)

The gage 38 (shown in Fig. 3 of the drawings) is attached to the brace 39, the ends of which are inserted in two of the legs supporting one side of the cutting mechanism. This

gage is used for the purpose of adjusting all of the series of cutters to a uniform position relative to the periphery of the drum in which they are located. This gage is adapted to be shortened or lengthened, as may be required, and is capable of a rotary and longitudinal movement on the brace 39, in order to bring it to any desired point.

Dies may be employed as a substitute for the series of cutters herein shown and described, the male dies being placed in the drum C and the female dies in the drum B.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a rotary cutting mechanism, the drum C, provided with an outer elastic covering of sheet-rubber, and adapted to carry a series of cutters set in the shell of the drum and secured rigidly thereto, as herein described, in combination with the drum B, constructed of wood and metal, and so arranged as to present a cutting bed or surface of wood to the action of the cutting devices located in the drum C, substantially as and for the purposes herein set forth.

2. In a rotary cutting mechanism, the combination, with the drum C, of the cutters 13 and 14, the stud-bolts 18, the clamping-plates 19, provided with the channel or channels 21, thereby adapting each clamping-plate to engage with and hold in place two or more of the series of cutters 13 and 14, substantially as herein described.

3. In a rotary cutting mechanism, the combination, with the rotary drum C, of the ring 22, arranged on the inner circumferential surface of the drum C, the series of cutters 15, the bolts 23, and the nuts 24, the outer ends of the bolts 23 being round and threaded, the remaining part of the bolts being square in form, beveled on one side, enlarged toward the inner ends, and loosely inserted, thereby adapting these parts to securely wedge together when the nuts 24 are drawn tight, substantially as herein shown and described.

4. In a rotary cutting mechanism, the combination, with the drum C and the hub *a* thereof, of the bolts 25 and the cutters 16, the inner ends of said bolts being threaded and adjustably inserted in the hub *a*, the opposite ends being hollowed out for the reception of the rear projecting part on the backs of the cutters 16, substantially as described.

5. In a rotary cutting mechanism, the combination, with the rotary drum C and the series of cutters arranged therein, of the adjustable gage 38 and the brace 39, by means of which gage the series of cutters are adjusted to a regular and uniform position relative to the periphery of the drum C, substantially as described.

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Witnesses:

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